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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,239	11/12/2003	Tsuyoshi Togawa	032096	3538

38834 7590 05/07/2007

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EXAMINER	
DURNFORD-GESZVAIN, DILLON	
ART UNIT	**PAPER NUMBER**
2622	
MAIL DATE	**DELIVERY MODE**
05/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/705,239	TOGAWA ET AL.	
	Examiner	Art Unit	
	Dillon Durnford-Geszvain	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims **5** and **6** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim **5** recites that "the control unit continues to feed the drive signal from the drive unit during changing the number of pixels read from the image-pickup unit." The specification as originally filed does not enable the claimed subject matter. In particular there is no teaching in the specification regarding changing the number of pixels to be read from the image-pickup unit, let alone what the drive unit does in such a situation.

If the Applicant believes that the specification does, in fact, enable the claimed subject matter the Examiner respectfully requests that any response traversing the present rejection of claim **5** include specific citations from the application as originally filed that would enable the limitation in question.

Claim **6** is rejected as it depends from claim **5**.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims **2, 5, 6, 9-11** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim **2** recites the limitation "the subsequent-stage processing images" in line 4. There is insufficient antecedent basis for this limitation in the claim.

The Examiner believes that the recitation is referring to the "images for use in one or part of a process of a subsequent stage." However, as there is no recitation in claim **1** of "subsequent-stage processing images" the claim is rendered indefinite and must be revised.

Further, the language used in claim **2** is vague and confusing. The recitation that "the control unit stops feeding the drive signal from the drive unit at a time *other than* when the image-pickup unit is picking up [images for use in one or part of a process of a subsequent stage]." This recitation needs to be clarified, as it is not clear what the recitation is intended to claim.

6. Claim **5** recites the limitation "during changing the number of pixels read from the image-pickup unit." The language used in the recitation of the claim, aside from any problems of enablement as noted above, is vague and indefinite. It is unclear from the claim, as written, when the number of pixels to be read is

changed and what changing the number of pixels to be read entails.

Examination on the merits of claim **5** is precluded, as the Examiner cannot determine the subject matter that is being claimed.

7. Claim **6**, aside from depending from claim **5** and being rejected for that reason, recites the limitation "the control unit stops feeding the drive signal from the drive unit after the number of pixels read from the image-pickup unit is changed." This appears to directly contradict the recitation in claim **5** and therefore is indefinite as it is nonsensical to perform mutually exclusive operations.

Examination on the merits of claim **6** is precluded, as the Examiner cannot determine the subject matter that is being claimed.

8. Claim **9** recites the limitation "even after the image-pickup unit is shifted to a frame-readout mode" In line 3. However, there is no recitation in claim **1**, from which claim **9** depends, of switching the image-pickup device into a frame-readout mode, what mode the image-pickup unit was previously in, or even that the image-pickup device is capable of being switched into a frame-readout mode.

Therefore the claim is indefinite as it is unclear when the image-pickup unit is switched into a frame-readout mode and what mode the image-pickup device was in before it was switched into said frame-readout mode.

Te specification appears to indicate that the image-pickup unit is in a "draft" mode before it is switched into a frame-readout mode and therefore

examination on the merits is not precluded. However, the claim must be either cancelled or amended to overcome the present rejection.

Claims **10** and **11** are rejected as being indefinite, at least, for depending from indefinite claim **9**.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims **1-4** and **9-11** are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,212,555 (Stoltz).

As to claim **1**, Stoltz teaches an image-pickup apparatus comprising: a shape-variable mirror 11 (see Fig. 1) having a deformable reflection plane and an electrode 44 (see Fig. 2) for controlling the shape of the reflection plane; a drive unit 16 for feeding a signal for driving the reflection plane to the electrode 44 (Column 4 lines 23-28); a taking-lens system (13 and 14) for defining a focal length in accordance with the deformation amount of the reflection plane of the

shape-variable mirror (Column 3 lines 45-51); an image-pickup unit 15 for picking up images focused via the taking-lens system (13 and 14) and the shape-variable mirror 11; and a control unit 16 for controlling the drive unit so as to continuously feed the drive signal in order to maintain the deformation state of the shape-variable mirror when the image-pickup unit is picking up images for use in one or part of a process of a subsequent stage 33 (Column 4 lines 23-28 and Column 5 lines 9-13).

As to claim **2**, see the rejection of claim **1** and note that Stoltz further teaches an image-pickup apparatus according to claim **1**, wherein the control unit 16 stops feeding the drive signal from the drive unit 16 at a time other than when the image-pickup unit 15 is picking up the subsequent-stage processing images (Column 5 lines 24-47).

Note that the rejection of claim **2** above was made in light of the rejection of claim **2** under 35 USC 112.

As to claim **3**, see the rejection of claim **1** and note that Stoltz further teaches an image-pickup apparatus according to claim **1**, wherein the control unit 16 continues to feed the drive signal from the drive unit 16 during exposure (Column 5 lines 24-47).

As to claim **4**, see the rejection of claim **3** and note that Stoltz further teaches an image-pickup apparatus according to claim **3**, wherein the control unit

16 stops feeding the drive signal from the drive unit after the exposure (this is inherent, after exposure of a single still image the mirror would stop being deformed and would go to a neutral position, also see column 4 line 59 to Column 5 line 2).

As to claim **9**, see the rejection of claim **1** and note that Stoltz further teaches an image-pickup apparatus according to claim **1**, wherein the control unit 16 continues to feed the drive signal from the drive unit 16 even after the image-pickup unit 15 is shifted to a frame-readout mode (Column 4 lines 24-28, and note that the device can be used for "real-time image capture", i.e. moving image capture, and therefore would drive the mirror after the image has been read from the imager).

Note that the rejection of claim **9** above was made in light of the rejection of claim **9** under 35 USC 112.

As to claim **10**, see the rejection of claim **9** and note that Stoltz further teaches an image-pickup apparatus according to claim **9**, wherein the control unit continues to feed the drive signal from the drive unit while the image-pickup unit is continuously picking up images (Column 5 lines 24-47).

Note that the rejection of claim **10** above was made in light of the rejection of claim **10** under 35 USC 112.

As to claim **11**, see the rejection of claim **9** and note that Stoltz further

teaches an image-pickup apparatus according to claim **9**, wherein the control unit continues to feed the drive signal from the drive unit while the image-pickup unit is picking up motion images (Column 5 lines 24-47).

Note that the rejection of claim **11** above was made in light of the rejection of claim **11** under 35 USC 112.

11. Claims **1, 7** and **8** are rejected under 35 U.S.C. 102(e) as being anticipated by US 2004/0012710 (Yaji et al.)

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As to claim **1**, Yaji et al. teaches an image-pickup apparatus comprising: a shape-variable mirror 11 (see Fig. 1) having a deformable reflection plane and an electrode 22 for controlling the shape of the reflection plane; a drive unit 12 for feeding a signal for driving the reflection plane to the electrode; a taking-lens system 1 for defining a focal length in accordance with the deformation amount of the reflection plane of the shape-variable mirror 11 (see Fig. 4); an image-pickup unit 3 for picking up images focused via the taking-lens system 1 and the shape-variable mirror 11; and a control unit 13 for controlling the drive unit 12 so as to

continuously feed the drive signal in order to maintain the deformation state of the shape-variable mirror when the image-pickup unit is picking up images for use in one or part of a process of a subsequent stage ([0092]).

As to claim **7**, see the rejection of claim **1** and note that Yaji et al. further teaches an image-pickup apparatus according to claim **1**, further comprising a mechanical shutter, wherein when the mechanical shutter is opened, the control unit continues to feed the drive signal from the drive unit when the image-pickup unit is picking up images of at least one or part of the process of the subsequent stage ([0112]).

As to claim **8**, see the rejection of claim **7** and note that Yaji et al. further teaches an image-pickup apparatus according to claim **7**, wherein the control unit stops feeding the drive signal from the driving unit after the mechanical shutter is closed ([0092]).

12. Claims **12, 13, 16, 19, 22** and **23** are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,464,363 (Nishioka et al.).

As to claim **12**, Nishioka et al. teaches an image-pickup apparatus comprising: an optical system comprising an active optical element 209 (see Fig. 22) having a functional region that converts optical characteristics of incident light in accordance with an applied drive signal so as to emit it; an image-pickup element 208 that photo-electrically converts object images focused via the optical

system; a signal processing unit (not shown but necessarily present) for processing an image-pickup signal of the object images produced from the image-pickup element in a predetermined manner; an active optical-element drive unit 214 for producing a drive signal to be applied to the active optical element 209; and a control unit (not shown but necessarily present) for controlling the active optical-element drive unit 214, wherein prior to picking up images, the control unit controls the active optical-element drive unit so as to apply a predetermined drive signal to the active optical element so that a focal position of the optical system is accordingly adjusted (Column 40 lines 59-65).

As to claim **13**, see the rejection of claim **12** and note that Nishioka et al. further teaches an image-pickup apparatus according to claim **12**, wherein the active optical element 209 is a shape-variable mirror with optical characteristics changeable by varying the shape of a reflection plane (Column 39 lines 27-28).

As to claim **16**, see the rejection of claim **12** and note that Nishioka et al. further teaches an image-pickup apparatus according to claim **12**, wherein the active optical-element drive unit 214 produces a drive signal corresponding to any focusing position within a focusing range from a minimum imaging distance to infinity as a predetermined drive signal in that a focal position of the optical system is accordingly adjusted (Column 40 lines 59-65).

As to claim **19**, see the rejection of claim **12** and note that Nishioka et al.

further teaches an image-pickup apparatus according to claim **12**, wherein the optical system comprises a variable-focal point optical system (Column 39 lines 27-28), and wherein the active optical-element drive unit 214 produces a drive signal corresponding to any focusing position in entire focal lengths adaptable to the variable-focal point optical system within a focusing range from a minimum photographing distance to infinity as a predetermined drive signal in that a focal position of the optical system is accordingly adjusted (Column 40 lines 59-65).

As to claim **22**, see the rejection of claim **12** and note that Nishioka et al. further teaches an image-pickup apparatus according to claim **12**, further comprising a temperature-detection 215 unit, wherein the active optical-element drive unit 214 corrects a drive signal in accordance with a detected signal from the temperature-detection unit 215 (Column 40 lines 44-55).

As to claim **23**, see the rejection of claim **12** and note that Nishioka et al. further teaches image-pickup apparatus according to claim **12**, further comprising a humidity-detection unit 216, wherein the active optical-element drive unit 214 corrects a drive signal in accordance with a detected signal from the humidity-detection unit 216 (Column 409 lines 44-55).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims **14, 15, 17, 18, 20** and **21** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,464,363 (Nishioka et al.) in view of the Examiner's Official Notice.

As to claim **14**, see the rejection of claim **12** and note that although Nishioka et al. does not specifically disclose auto-exposure control the Examiner takes Official Notice that it was old and well known at the time the invention was made to have used auto-exposure control in an image-pickup apparatus.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used auto-exposure control in the apparatus of Nishioka et al. as it allows images with proper exposure to be obtained. Further, if auto-exposure were used in the apparatus of Nishioka et al. it would certainly drive the mirror after auto-exposure is performed to obtain said image with proper exposure.

As to claim **15**, see rejection of claim **12** and note that although Nishioka et al. does not specifically disclose auto white balance control the Examiner takes Official Notice that it was old and well known at the time the invention was made to have used auto white balance control in an image-pickup apparatus.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used auto white balance control in the

apparatus of Nishioka et al. as it allows images with proper white balance to be obtained. Further, if auto white balance were used in the apparatus of Nishioka et al. it would certainly drive the mirror after auto white balance is performed to obtain said image with proper white balance.

As to claim **17**, see the rejection of claim **14** and note that Nishioka et al. further teaches an image-pickup apparatus according to claim **14**, wherein the active optical-element drive unit 214 produces a drive signal corresponding to any focusing position within a focusing range from a minimum imaging distance to infinity as a predetermined drive signal in that a focal position of the optical system is accordingly adjusted (Column 40 lines 59-65).

As to claim **18**, see the rejection of claim **16** and note that although Nishioka et al. does not disclose where the hill-climbing operation described in Column 40 lines 59-65 is started the Examiner takes Official Notice that it was old and well known at the time the invention was made to have started a hill-climbing operation for focusing such as this at an intermediate position as this is most likely to produce a shorter focus adjusting time than starting at either extremum.

As to claim **20**, see the rejection of claim **14** and note that Nishioka et al. further teaches an image-pickup apparatus according to claim **14**, wherein the optical system comprises a variable-focal point optical system (Column 39 lines

27-28), and wherein the active optical-element drive unit 214 produces a drive signal corresponding to any focusing position in entire focal lengths adaptable to the variable-focal point optical system within a focusing range from a minimum photographing distance to infinity as a predetermined drive signal in that a focal position of the optical system is accordingly adjusted (Column 40 lines 59-65).

As to claim **21**, see the rejection of claim **19** and note that although Nishioka et al. does not disclose where the hill-climbing operation described in Column 40 lines 59-65 is started the Examiner takes Official Notice that it was old and well known at the time the invention was made to have started a hill-climbing operation for focusing such as this at an intermediate position as this is most likely to produce a shorter focus adjusting time than starting at either extremum.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2002/0118464 (Nishioka et al.). US 2002/0136150 (Mihara et al.). US 6,437,925 (Nishioka et al.). US 2006/0142877 (Solomon). US 2003/0107789 (Hishioka). US 2004/0012683 (Yamasaki et al.). US 2005/0212946 (Mikami).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dillon Durnford-Geszvain whose telephone

number is (571) 272-2829. The examiner can normally be reached on Monday through Friday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dillon Durnford-Geszvain 4/28/2007

NGOC-YEN VU
SUPERVISORY PATENT EXAMINER